INDEX.

PAGE

About Snakes 571
Africa, Population of 426
Algeria, Cost of the Proposed Lake in 139
Ancient Methods of Filtration 495
Ancient Uses of Cork 429
Animal Mounds in the Pyrenees 135
Animal Transformations, New Views of. (Illustrated.) 625
Anthropometric Observation 431
Anthropology, Recent 145
Antiquity of Man 572
Arago's Statue, The Inauguration of 114
Archæopteryx, Carl Vogt on the 136
Arithmetic, Early Methods in 204
Arsenic in Kindergartens 694
Arsenic in the Household and School 715
Artesian Wells and the Great Sahara 530
Association of Ideas. (Illustrated.) 577
Astronomical Discoveries, Announcement of 715
Athletics in Schools 677
Atlantis, On 266
Authorship, Intellectual Straining in 93

Bain, Alexander, On John Stuart Mill 25, 311, 501
Bain on the "Data of Ethics" 210
Bennett, A. Hughes 519
Billson, William W., on the Origin of Criminal Law 433
Bird-Reasoning 139
Bolton, Professor H. Carrington 495
Books noticed:
"Ethics of Science and Duty" (Bascom) 125
"Freedom in Science and Teaching" (Haeckel) 127
"Geological Survey of Ohio," Vol. III 129
"Distribution of Heat in the Spectra of Various Sources of Radiation" (Jaynes) 130
"A Defense of Philosophic Doubt" (Balfour) 130
"The Science of the Bible" (Woolley) 131
"Nests and Eggs of American Birds" (Ingersoll) 131
"The Evidence of the Senses" (Stevenson) 131
"Haeckel's Genesis of Man" (Ward) 132
"Easy Lessons in Popular Science" (Monteith) 133

Books noticed: PAGE

"Hints toward a National Culture" (Boyce) 133
"Scientific Lectures" (Lubbock) 133
"Science Lectures at South Kensington" 133
"Zoölogy of Invertebrate Animals" (Macalister) 133
"Gray's Botanical Text-Book" (Gray) 277
"Hygiene and Public Health" (Buck) 279
"First Lines of Therapeutics" (Harvey) 281
"Neurility" (Clevenger) 282
"Is Life worth Living?" (Mallock) 417
"Naval Hygiene" (Wilson) 418
"Silk Goods of America" (Wykoff) 419
"Geology of the Lower Amazonas" (Derby) 421
"Primitive Manners and Customs" (Farrer) 421
"Papers read before the Pi Eta Scientific Society of Rensselaer Polytechnic Institute" 422
"American Ornithology" (Wilson and Bonaparte) 422
"The Rosicrucians" (Jennings) 423
"Antiquities and Platycnemism of the Mound-Builders of Wisconsin" (De Hart) 423
"The Silkworm" (Riley) 423
"Geology of the Diamantiferous Regions of the Province of Parana, Brazil" (Derby) 423
"First Step in Chemical Principles" (Leffman) 424
"Young Folks' Cyclopædia of Common Things" (Champlin) 424
"Inorganic Chemistry" (Valentin) 424
"The Value of Life" (Anonymous) 424
"Octavius Perinchief" (Lanman) 561
"Arctic Voyages of Nordenskjöld" 563
"Illustrated Dictionary of Scientific Terms" (Rossiter) 564
"The English Language and its Early Literature" (Gilmore) 565
"Darwinism and other Essays" (Fiske) 565
"Shell Mounds of Omari" (Morse) 566
"Fuel, its Combustion and Economy" (Clark) 566
"Units and Physical Constants" (Everett) 566
"Solar Light and Heat" (Allen) 567
"First Book of Qualitative Chemistry" (Prescott) 567
"Electro-Metallurgy" (Watt) 567
"Ceremonial Institutions" (Spencer) 698
"Theory of Political Economy" (Jevons) 699
"The Chemistry of Common Life" (Johnston) 701
"Astronomy for Schools and Colleges" (Newcomb and Holden) 702
"Progress and Poverty" (George) 702
"Lectures and Essays" (Clifford) 703
"An Essay on the Bible Narrative of Creation" (Grote) 705
"Triassic Formation of New Jersey" (Russell) 707
"Erasmus Darwin" (Krause) 707
"Eighth, Ninth, and Tenth Annual Reports of the Geological Survey of Indiana" (Cox) 708
"Modern Meteorology" 708
"The Great Fur Land" (Robinson) 708

Books noticed: PAGE
"The Berea Sandstone of Ohio" (Orton) ... 709
"The Crayfish" (Huxley) ... 850
"The Refutation of Darwinism" (O'Neill) ... 851
"Geological and Natural History Survey of Minnesota" (Winchell) ... 851
"The Kansas Review" ... 851
"The Californian" ... 851
"Zoölogy for Students and General Readers" (Packard) ... 852
"Problems of Life and Mind" (Lewes) ... 852
"The Younger Edda" (Anderson) ... 852
"Elementary Lessons on Sound" (Stone) ... 852
"Dictionary of German Terms used in Medicine" (Cotter) ... 853
"Theology and Mythology" (O'Donoghue) ... 853
"Popular Romances of the Middle Ages" (Cox and Jones) ... 853
"The American Entomologist" (Riley and Fuller) ... 853
"American Monthly Microscopical Journal" (Hitchcock) ... 853
"Economics of Industry" (Marshall) ... 853
"On the Native Iron of Greenland" (Smith) ... 854
"The Development of the Human Race" (Steinach) ... 854
"Beer, and its Manufacture formerly and now" (Planitz) ... 854
"The Berkeley Quarterly" ... 855
"The Workshop Companion" ... 855
"Blowpipe Analysis" (Landauer) ... 855
"United States Commission of Fish and Fisheries" ... 855
"Guides for Science-Teaching" ... 855
Literary Notes ... 850
Bigelow, W. S., Letter from ... 842
Bleaching Preparation, New ... 861
Brain-Cells, Education of ... 200
Brain, Size of, and Size of Body ... 872
Brain-Texture and Mental Make-up ... 143
Buckland, Frank ... 318
Buell, Charles J., Letter from ... 842
Burials, Premature ... 389
Butter-making, Improvements in ... 571

Canal Routes, Interoceanic ... 380
Cannibals, South African ... 286
Carpenter, Professor William B. ... 614
Casualties, Railroad ... 413
Cattle, The Wild, of Great Britain ... 138
Celluloid, Composition and Uses of ... 859
Century-Plant, A Precocious ... 575
Chandler, Dr. Charles F., Sketch of. (Portrait.) ... 833
Chesapeake Laboratory, Work at the ... 570
Chinese, Morality among the ... 270
Chromatics, Rood's—A Misleading Criticism ... 274
Circulating Libraries and Contagious Disease ... 138
Colorado, Southern, Prehistoric Ruins in ... 666
Coloring Matters, New ... 575
Color-Sense, Education of the ... 425

PAGE
Commerce, Removing the Barriers of..... 416
Conant on International Copyright..... 697
Conant, William C..... 653
Cork, Ancient Uses of..... 429
Correspondence..... 266, 408, 554, 693, 842
Crayfish, The. (Illustrated.)..... 789
Criminal Law, Origin of..... 433
Criminal Law, The Origin of..... 842
Croll's "Climate and Time"..... 810
Crookes, William..... 13, 157
Curious Ways of getting Food. (Illustrated.)..... 770

Dalby, W. B..... 197
Daly, Charles P..... 478
Data of Ethics, Reception of the..... 408
Daylight in the Schoolroom..... 517
Death of Professor B. F. Mudge..... 569
Detective, A Scientific..... 141
Diamonds, Artificial..... 716
Diseases of Wild Animals..... 11
Diving, Improved Method of..... 711
Dolmens in Japan. (Illustrated.)..... 593
Dove, Heinrich Wilhelm, Sketch of. (Portrait.)..... 261

Eastern City, A Fabled..... 427
Eddy, William A. The Evolution of a New Sense..... 66
Editor's Table..... 121, 267, 408, 555, 695, 842
Educational Reform, Conditions of..... 849
Education for Guidance..... 559
Education of the Color-Sense..... 425
Education, Higher, of Women, Hygiene in the..... 519
Electricity and Vegetation..... 712
Electric Light, Distribution of the..... 284
Electric Light, Progress of the..... 570
Electrification, Expansion of Bodies by..... 574
Emergencies, Common Sense in..... 719
Enjoyment, The Duty of..... 640
Epidemics, Two Remarkable..... 286
Evolution, Fallacies of, A Reply to..... 101
Expansion of Bodies by Electrification..... 574
Experimental Legislation..... 754
Experiments in Punishment..... 431

Fairchild, Herman L..... 770
Far West, The Geology of the..... 568
Filtration, Ancient Methods of..... 495
Fish, A New Food-..... 711
Fish, Animal Heat of..... 861
Fishes, Voice in..... 574
Fitch, Dr. Asa, Sketch of. (Portrait.)..... 116

PAGE
Food, Curious Ways of getting. (Illustrated.) 770
Forces, Wasted 408
Form, the Pleasure of Visual 780
Fourcy, Charles de 380
France, Apprentice-Schools in 285
Free Schools of America, The Early 668
Free-Will, Scientific Aspects of 745
Frost-Phenomena 842
Fuel, Water as 658

Gannett, Henry 666
Gas and the Electric Light 859
Geographical Science, The Beginnings of. (Illustrated.) 286
Geology of the Far West 568
George, Henry, On the Study of Political Economy 601
Glaciers, Experimental 860
Granville, J. Mortimer. 200
Great Britain, The Wild Cattle of 138
Green Mountains, Age of the 858
Green, Nelson W 71
Grote, A. R., Letter from 266
Gypsies, Origin of the 540

Hanoverian Village Life 467
Harmony, Modern, Imperfections of 508
Hay, Dr. George, Letter from 694
Hemp-Plant, Intoxicating Properties of the 719
Herrings 427
Hoffmann, Frederick, Sketch of Dove 261
Honeycomb, a Living 824
Honey-making in the United States 142
Hopkins, J. H 798
Horses, Many-toed. (Illustrated.) 258
Household Pet, A Roguish. (Illustrated.) 318
Hygiene in the Higher Education of Women 518

Ice, Age of 554, 698
Ideas, The Association of. (Illustrated.) 577
Imperfections of Modern Harmony 508
Improvements in Butter-making 571
Intellectual Straining in Authorship 93
Intemperance in Study 645
International Copyright, Conant on 697
Interoceanic Canal Question, Some Features of the 842
Iron-making, Petroleum in 287
Iron, Passivity of 719
International Weather-Service, The. (Illustrated.) 289
Interoceanic Canal Routes. (Illustrated.) 380

Jackson, George A 236
James, William 577

PAGE
Japan, Dolmens in. (Illustrated.) 593
Javal, M., On Daylight in the Schoolroom 517
Jevons, Professor W. Stanley 754
Jupiter, What is He doing? (Illustrated.) 787

Kindergartens, Arsenic in 694
Knowledge, First-hand and Second-hand 197

Langley, S. P., Recent Progress of Solar Physics 1
Lankester, Professor E. Ray 789
Learning to write 795
Le Conte, John, Mars and his Moons 82
Le Conte, Joseph, The Genesis of Sex 167
Leffingwell, Dr. A. J 745
Legislation, Experimental 754
Leidy, Professor Joseph 612
"Let well enough alone" 695
Libraries, Circulating, and Contagious Disease 138
Lightning-Rod, Investigating the 863
Lindsay, W. Lauder 346
Literary Notices 125, 277, 417, 561, 698, 850
Lubbock, On Science in the Primary Schools 429
Luminous Power, Distribution of, in the Sun's Rays 137
Lungren, C. M., Progress and Poverty 721
Lyford, M., Letter from 693
Lyons, Lieutenant T. A 35, 179

Mackay, G. Eric 389
Maclagan, Dr. T. J., On Typhoid Fever 460
Man, On the Antiquity of 140, 572
Many-toed Horses. (Illustrated.) 258
Maps and Map-making before Mercator. (Illustrated.) 478
Mars and his Moons 82
Marsh, O. C 219, 363
Mason, R. O 330
Matamata, The. (Illustrated.) 684
Matter, Radiant. (Illustrated.) 13, 157
Maury, Professor T. B., International Weather-Service. (Illustrated.) 289
McGee, W. J 810
Meteoric Display, An Expected 247
Meteorology, Ocean. (Illustrated.) 35, 179
Mill, John Stuart 25, 311, 501
Minerals, Action of Organic Acids on 710
Monkey, Intelligence of a Pet 714
Moral Sense in the Lower Animals 346
Morals, Goldwin Smith on 267
Morse, Professor E. S 593
Mudge, B. F., Death of 569

Nature, The Force behind 614
Nelson, E 337

PAGE
Niger, Source of the 860
Nordenskjöld, What He has done 137
Nordhoff, Walter 467
Norton, H. B., Letter from 554
Notes 143, 287, 432, 576, 720, 864

Observations, Anthropometric 431
Ocean Meteorology. (Illustrated.) 35, 179
Oregon, Salmon Industries of 573
Origin of Criminal Law 433
Origin of the Gypsies 540

Paleontological Discovery, History and Methods of 219, 263
Pasture, Sheep poisoned at 575
Pearce, S. Austen 508
Perrier, Edmond 625
Petroleum in Iron-making 287
Petroleum for Steam-making 136
Phenomenon, Interesting Luminous 554
Philosophy, Mythologic 56
Phosphorescence, Vegetable 804
Phylloxera, Applications for 718
Physiology, The Study of 43
Plants, Agency of, in Earth-building 713
Plants, Assimilative Power of 142
Plants, The Textile, of the World 831
Platinum, Experiments with 134
Political Economy, Study of 601
Popular Miscellany 134, 283, 425, 568, 710, 858
Population of Africa 426
Powell, J. W., Mythologic Philosophy 56
Precocity, Cases of Remarkable 428
Prehistoric Ruins in Southern Colorado 666
Premature Burials 389
Prescott, Ellen 804
Preservative Process, A New 717
Proctor, Richard A., Expected Meteoric Display 247
Progress and Poverty 721
Progress of the Electric Light 570
Publications Received 133, 282, 425, 567, 709, 856
Punishment, Experiments in 431
Punishment, Vengeance in 555
Pye-Smith, P. H., The Study of Physiology 43

Rabies, Transmissibility of Human 712
Radiant Matter 13, 157
Railroad Casualties 413
Rhine, Alice H 668
Records, Prehistoric 545
Respecting Rubbish 97

PAGE
Ritter, Carl, Sketch of. (Portrait.) 689
River-Beds, The Old, of Middle California 858
Romanes, George J. 101

Salmon Industries of Oregon 573
Saporta's World of Plants before the Appearance of Man. (Illustrated.) .. 446
Sargassum. Does it vegetate in the Open Sea? 573
Sauvage, E. 684
Schools, Athletics in 677
Schroeder, Lieutenant Seaton 530
Science in the Primary Schools 429
Scientific Teaching in the Colleges 556
Scorpion, Suicide of the 712
Seamen, Color-Blindness of 285
Searle, Arthur 673
Seely, G. B., Letter from 554
Sense, A New, The Evolution of 66
Sex, The Genesis of 167
Sheep, poisoned at Pasture 575
Silliman, Benjamin, Sketch of. (Portrait.) 550
Skinner, Joseph J. 397
Slack, H. J. 737
Snakes, How they shed their Skins 710
Social Distinctions, Traditional Origin of 430
Solar Appendages 121
Solar Physics, Recent Progress of 1
Sounds, Discrimination and Memory of 428
Spies, Concerning Honors to 122
Spiritualism, Middle-Age 354
Springs and Wells, Overflow of. (Illustrated.) 71, 266, 397
Stammering and its Causes 863
Stars, The Immensity of the 140
Stoves, Ventilating 124
Study, Intemperance in 645
Suicide, A Consideration of 798
Sully, James 780
Sun-Spots and Rainfall 861

Tea-drinking, Effects of Excessive 862
Teeth, Effects of Tobacco on the 137
Telescope, Most Powerful in Existence 337
Theologian, A Young, Letter from 693
Thresher-Shark, Habits of the 139
Tobacco-Pipe, Antiquity of the 862
Tobacco-Smoking, Parkes on 718
Traditional Origin of Social D nctions 430
Trowbridge, J. T., Letter from 266
Tuke, D. Hack 645
Tylor, E. B., Recent Anthropology 145
Typhoid Fever, how conveyed 460

PAGE
Upper Air, Proportion of Oxygen in..... 575

Vaccination in New York..... 330
Vaile, E. O., Early Methods in Arithmetic..... 204
Vaughan, Professor Daniel, The Works of..... 125
Vegetable Phosphorescence..... 804
Vengeance in Punishment..... 555
Vessels, Raising Sunken..... 287
Vilain, Jean..... 11
Village Life, Hanoverian..... 467
Voice in Fishes..... 574

Wahl, William H..... 408
Ward's Natural Science Establishment..... 612
Water as Fuel..... 653
Waves, Stilling the, with Oil..... 136
Weather-Service, The International. (Illustrated.)..... 289
What is Jupiter doing? (Illustrated.)..... 787
Wild Animals, Diseases of..... 11
Windows, Stained..... 141
World of Plants before the Appearance of Man..... 446

Zoölogical Work at the Chesapeake Laboratory..... 570

END OF VOL. XVI.